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NEWS 4	APR 02	DWPI: New display format ALLSTR available
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NEWS 14	JUN 21	Removal of Pre-IPC 8 data fields streamline displays in CA/CAplus, CASREACT,and MARPAT
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NEWS 17	JUN 29	Enhanced Batch Search Options in DGENE, USGENE, and PCTGEN
NEWS 18	JUL 19	Enhancement of citation information in INPADOC databases provides new, more efficient competitor analyses
NEWS 19	JUL 26	CAS coverage of global patent authorities has expanded to 61 with the addition of Costa Rica

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FILE 'HOME' ENTERED AT 18:12:10 ON 17 AUG 2010

=> file caplus, agricola
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                                                       ENTRY    SESSION
FULL ESTIMATED COST                                     0.22       0.22

FILE 'CAPLUS' ENTERED AT 18:12:26 ON 17 AUG 2010
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FILE 'AGRICOLA' ENTERED AT 18:12:26 ON 17 AUG 2010

=> s recycle (s) (fatty (a) acid (a) methyl (a) ester)
L1          11 RECYCLE (S) (FATTY (A) ACID (A) METHYL (A) ESTER)

=> s l1 transesterification or esterification
MISSING OPERATOR L1 TRANSESTERI
The search profile that was entered contains terms or
nested terms that are not separated by a logical operator.

=> s l1 (l) (transesterification or esterification)
L2           5 L1 (L) (TRANSESTERIFICATION OR ESTERIFICATION)

=> d l2 1-5 ibib abs

L2   ANSWER 1 OF 5  CAPLUS  COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:        2009:1314429  CAPLUS
TITLE:                   Rapid microwave-assisted transesterification of yellow
                         horn oil to biodiesel using a heteropolyacid solid
                         catalyst
AUTHOR(S):               Zhang, Su; Zu, Yuan-Gang; Fu, Yu-Jie; Luo, Meng;
                         Zhang, Dong-Yang; Efferth, Thomas
CORPORATE SOURCE:        Key Laboratory of Forest Plant Ecology, Ministry of
                         Education, Northeast Forestry University, Harbin,
                         150040, Peop. Rep. China
SOURCE:                  Bioresource Technology (2009), Volume Date 2010,
                         101(3), 931-936
                         CODEN: BIRTEB; ISSN: 0960-8524
PUBLISHER:               Elsevier Ltd.
DOCUMENT TYPE:           Journal
```

LANGUAGE: English

AB An efficient microwave-assisted transesterification (MAT) technique was developed to prepare biodiesel from yellow horn (Xanthoceras sorbifolia Bunge.) oil with a heteropolyacid (HPA) catalyst namely Cs2.5H0.5PW12O40. A study for optimizing the reaction conditions such as reaction temperature, time, molar ratio of methanol/oil, catalyst amount, and recycle number of catalyst has been performed. The maximum yield of fatty acid Me esters (FAMEs) reached 96.22% under optimal conditions of temperature 60 °C, 10 min, molar ratio of methanol/oil 12:1, 1% (weight/weight of oil) catalyst and min. recycle number nine times. The final product of biodiesel, obtained after the new catalyzed process, was analyzed by gas chromatog. The results showed that the Cs2.5H0.5PW12O40 heterogeneous acid catalyst had higher efficiency for transesterification under microwave irradiation compared with the conventional method. The product properties of yellow horn biodiesel are found to be in agreement with EN 14214 standard

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L2 ANSWER 2 OF 5 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2009:1151554 CAPLUS

DOCUMENT NUMBER: 151:428243

TITLE: Production of biodiesel fuel with pericarpium zanthoxyli seed oil and cyclohexylamine catalyst

INVENTOR(S): Liang, Wensheng; Li, Xiuqin; Li, Wen; Ni, Junhui

PATENT ASSIGNEE(S): Hancheng Wangyuan Generative Fuel Co., Ltd., Peop. Rep. China

SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 8pp. CODEN: CNXXEV

DOCUMENT TYPE: Patent

LANGUAGE: Chinese

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101531914	A	20090916	CN 2009-10022105	20090420

PRIORITY APPLN. INFO.: CN 2009-10022105 20090420

AB The title method comprises: (1) dehydrating and drying Pericarpium Zanthoxyli seed oil, mixing with methanol and catalyst (cyclohexylamine), pumping to a reaction kettle, wherein the mass ratio of Pericarpium Zanthoxyli seed oil to methanol is 10:(2-3), and carrying out an esterification reaction at normal pressure and 70-84°, (2) recycling methanol and cyclohexylamine, and recycling glycerol from the bottom of the reaction kettle, and (3) vacuum-distilling at 1-6 mmHg and 160-280° to recycle fatty acid Me ester obtained from step 1, and mixing wax in Pericarpium Zanthoxyli seed oil and 400-mesh non-hydrogen catalyst at normal pressure and 350-430° to carry out catalysis and pyrolysis reaction, wherein wax in Pericarpium Zanthoxyli seed oil is decomposed into small mol. biodiesel fuel, and colloid in Pericarpium Zanthoxyli seed oil is carbonized and coked into vegetable oil coke. The invented method has the advantages of simple operation, rapid reaction speed, high yield of biodiesel fuel with low solidifying point, and no secondary pollution.

L2 ANSWER 3 OF 5 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2006:362442 CAPLUS
DOCUMENT NUMBER: 144:394595
TITLE: Process for the preparation of fatty acid methyl ester from triglyceride oil by transesterification
INVENTOR(S): Ghosh, Pushpito Kumar; Adimurthy, Subbarayappa; Gandhi, Mahesh Ramnikbhai; Vaghela, Nilesh Kumar Kanjibhai; Rathod, Meena Rajnikant; Shethia, Bhupendra Dhanvantrai; Pandya, Jayant Batukrai; Parmar, Rajendra Amrutlal; Dodia, Prakash Jagjivanbhai; Patel, Mehul Ghanshyambhai; Parmar, Dahyabhai Revabhai; Patel, Sanat Natwarlal
PATENT ASSIGNEE(S): Council of Scientific and Industrial Research, India
SOURCE: U.S. Pat. Appl. Publ., 13 pp.
CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060080891	A1	20060420	US 2004-22397	20041223
US 7666234	B2	20100223		
AU 2004324250	A1	20060427	AU 2004-324250	20041020
AU 2004324250	B2	20100318		
CA 2626129	A1	20060427	CA 2004-2626129	20041020
WO 2006043281	A1	20060427	WO 2004-IN329	20041020
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW				
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM				
IN 2004DE02056	A	20060908	IN 2004-DE2056	20041020
EP 1996680	A1	20081203	EP 2004-791870	20041020
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, HR, LT, LV, MK				
RU 2379332	C1	20100120	RU 2008-115448	20041020
MX 2008004064	A	20090928	MX 2008-4064	20080326

PRIORITY APPLN. INFO.: IN 2004-DE2056 A 20041020
WO 2004-IN329 A 20041020

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The present invention relates to an improved process for the preparation of biodiesel from triglyceride oils through transesterification, particularly the fatty acid Me ester of oil mech. expelled from whole seeds of Jatropha curcas, a plant with potential for cultivation on wastelands in India and other countries, all unit operations being carried out at ambient temperature

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)

L2 ANSWER 4 OF 5 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2004:609282 CAPLUS
DOCUMENT NUMBER: 141:125428
TITLE: Manufacture of high-concentration α-sulfofatty acid alkyl ester salt-containing compositions, high-concentration surfactant compositions, and granular detergent compositions containing same
INVENTOR(S): Nishimura, Isao; Horiuchi, Teruo; Yoshii, Toru; Oishi, Takeshi; Miyata, Naomi; Kobayashi, Manabu; Ochiai, Takashi
PATENT ASSIGNEE(S): Lion Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004210807	A	20040729	JP 2002-378304	20021226
JP 4243953	B2	20090325		
JP 2008260950	A	20081030	JP 2008-163620	20080623
PRIORITY APPLN. INFO.:			JP 2002-378304	A3 20021226

AB Compns. containing α-sulfofatty acid alkyl ester salt (α-SF salt) is condensed to water content ≤13% by simple condensation operation; the condensed compns. have hexagonal phase at 70° by polarization microscopic observation, thereby preventing precipitation of Na_2SO_4. The high-concentration surfactant compns. for granular detergent compns. are manufactured from compns. containing α-SF salt 40-55, H_2O 20-40, lower alcs. 6-14, and nonionic surfactants 7-24% by decreasing the water content to ≤13% by simple condensation operation. Thus, 46% sulfonated Pastell M 146 Na salt (a 20:80 blend of C14 and C16 saturated fatty acid Me ester prepared by transesterification of palm oil with MeOH, followed by fractionating) was mixed with of a nonionic surfactant (polyoxyalkylene base) 10.1, ethoxylated Diadol 13 (C13 alc.) 10.1, MeOH 9.2, and H_2O 30.7% to give a composition with viscosity 0.22 Pa·s and showing liquid crystalline phase state at 50°, which was condensed by recycle flash evaporation method to give a composition with water content 10%, viscosity 3.2 Pa·s at 80°, showing hexagonal phase at 70°.

L2 ANSWER 5 OF 5 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2010) on STN
ACCESSION NUMBER: 2009:152831 AGRICOLA
DOCUMENT NUMBER: IND44280617
TITLE: Rapid microwave-assisted transesterification of yellow horn oil to biodiesel using a heteropolyacid solid catalyst.
AUTHOR(S): Zhang, Su; Zu, Yuan-Gang; Fu, Yu-Jie; Luo, Meng; Zhang, Dong-Yang; Efferth, Thomas
AVAILABILITY: DNAL (TD930.A32)
SOURCE: Bioresource technology, 2010 Feb. Vol. 101, no. 3 p. 931-936
Publisher: [New York, NY]: Elsevier Ltd.

ISSN: 0960-8524
NOTE: Includes references
DOCUMENT TYPE: Article; (ELECTRONIC RESOURCE)
FILE SEGMENT: Other US
LANGUAGE: English
AB An efficient microwave-assisted transesterification (MAT) technique was developed to prepare biodiesel from yellow horn (Xanthoceras sorbifolia Bunge.) oil with a heteropolyacid (HPA) catalyst namely Cs . H . PW O . A study for optimizing the reaction conditions such as reaction temperature, time, molar ratio of methanol/oil, catalyst amount, and recycle number of catalyst has been performed. The maximum yield of fatty acid methyl esters (FAMEs) reached 96.22% under optimal conditions of temperature 60 C, 10min, molar ratio of methanol/oil 12:1, 1% (w/w of oil) catalyst and minimum recycle number nine times. The final product of biodiesel, obtained after the new catalyzed process, was analyzed by gas chromatography. The results showed that the Cs . H . PW O heterogeneous acid catalyst had higher efficiency for transesterification under microwave irradiation compared with the conventional method. The product properties of yellow horn biodiesel are found to be in agreement with EN 14214 standard.

=> d his

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FILE 'CAPLUS, AGRICOLA' ENTERED AT 18:12:26 ON 17 AUG 2010
L1 11 S RECYCLE (S) (FATTY (A) ACID (A) METHYL (A) ESTER)
L2 5 S L1 (L) (TRANSESTERIFICATION OR ESTERIFICATION)

=> s recycle (7w) (fatty (a) acid (a) aklys (a) ester)
L3 0 RECYCLE (7W) (FATTY (A) ACID (A) AKLYS (A) ESTER)

=> s recycle (10w) (fatty (a) acid (a) alkyl (a) ester)
L4 1 RECYCLE (10W) (FATTY (A) ACID (A) ALKYL (A) ESTER)

=> d l4 ibib abs

L4 ANSWER 1 OF 1 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1996:513175 CAPLUS
DOCUMENT NUMBER: 125:142128
ORIGINAL REFERENCE NO.: 125:26601a,26604a
TITLE: Preparation of α-sulfo fatty acid alkyl ester salts and purification of solvents used in it
INVENTOR(S): Nakajima, Takashi; Nagaai, Kazuo; Ando, Susumu
PATENT ASSIGNEE(S): Lion Corp, Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 5 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 08169871	A	19960702	JP 1994-334348	19941216

PRIORITY APPLN. INFO.: JP 1994-334348 19941216
AB In preparation of the title compds., recovered solvents are treated with reducing substances and/or alkaline substances, purified, and recycled to the preparation process. C12-18 saturated fatty acid Me esters (prepared from palm oil and MeOH) was sulfonated by SO3 to give α-sulfo fatty acid Me ester, which was bleached by H2O2 in MeOH and neutralized with aqueous NaOH. Aqueous MeOH recovered from the above process was treated with Na2SO3 and NaOH at 30° for 30 min, distilled, and reused in the bleaching process.

=> s return (s) (fatty (a) acid (a) alkyl (a) ester)
L5 0 RETURN (S) (FATTY (A) ACID (A) ALKYL (A) ESTER)

=> s recycle (l) (fatty (w) acid (w) methyl (w) ester#)
L6 18 RECYCLE (L) (FATTY (W) ACID (W) METHYL (W) ESTER#)

=> s l6 and esterification
L7 4 L6 AND ESTERIFICATION

=> d l7 1-4 ibib abs

L7 ANSWER 1 OF 4 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2009:1151554 CAPLUS
DOCUMENT NUMBER: 151:428243
TITLE: Production of biodiesel fuel with pericarpium zanthoxyli seed oil and cyclohexylamine catalyst
INVENTOR(S): Liang, Wensheng; Li, Xiuqin; Li, Wen; Ni, Junhui
PATENT ASSIGNEE(S): Hancheng Wangyuan Generative Fuel Co., Ltd., Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 8pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101531914	A	20090916	CN 2009-10022105	20090420

PRIORITY APPLN. INFO.: CN 2009-10022105 20090420
AB The title method comprises: (1) dehydrating and drying Pericarpium Zanthoxyli seed oil, mixing with methanol and catalyst (cyclohexylamine), pumping to a reaction kettle, wherein the mass ratio of Pericarpium Zanthoxyli seed oil to methanol is 10:(2-3), and carrying out an esterification reaction at normal pressure and 70-84°, (2) recycling methanol and cyclohexylamine, and recycling glycerol from the bottom of the reaction kettle, and (3) vacuum-distilling at 1-6 mmHg and 160-280° to recycle fatty acid Me ester obtained from step 1, and mixing wax in Pericarpium Zanthoxyli seed oil and 400-mesh non-hydrogen catalyst at normal pressure and 350-430° to carry out catalysis and pyrolysis reaction, wherein wax in Pericarpium Zanthoxyli seed oil is decomposed into small mol. biodiesel fuel, and colloid in Pericarpium Zanthoxyli seed oil is carbonized and coked into vegetable oil coke. The invented method has the advantages of simple operation, rapid reaction speed, high yield of biodiesel fuel with low solidifying point, and no secondary pollution.

L7 ANSWER 2 OF 4 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2008:1337247 CAPLUS
DOCUMENT NUMBER: 149:515258
TITLE: Manufacturing method of fatty acid alkyl esters and/or glycerine
INVENTOR(S): Tachibana, Atsushi; Horie, Hironori; Akatsuka, Isao; Oku, Tomoji
PATENT ASSIGNEE(S): Nippon Shokubai Co., Ltd., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 12pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2008266418	A	20081106	JP 2007-109600	20070418
PRIORITY APPLN. INFO.:			JP 2007-109600	20070418

AB Fatty acid alkyl esters are prepared by reacting fats and oils with alcs. in the presence of catalysts, wherein the unreacted alcs. are recycled and the pure alcs. are separated from the recycled alcs. containing water using a membrane separation device. Thus, 2.53 kg/h a palm oil and 2.53 kg/h methanol were mixed and heated at 200°, the resulting mixture was introduced into a reactor containing a catalysts of manganese titanium trioxide at 200° under 5 MPa, the unreacted methanol was recovered and dehydrated using a membrane separation device, and fatty acid Me ester and glycerin were obtained without loss.

L7 ANSWER 3 OF 4 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2007:330532 CAPLUS
DOCUMENT NUMBER: 146:383414
TITLE: Production of biodiesel fuel from vegetable oil soapstock
INVENTOR(S): Jiang, Shaotong; Pan, Lijun; Shao, Ping; Luo, Shuizhong; Li, Yan; Zheng, Zhi
PATENT ASSIGNEE(S): Hefei University of Technology, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 7pp.
CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1931961	A	20070321	CN 2006-10096218	20060929
CN 100398629	C	20080702		
PRIORITY APPLN. INFO.:			CN 2006-10096218	20060929

AB The invention is exemplified by an example which comprises the steps of: (1) acidifying the vegetable oil soapstock with 50% sulfuric acid solution to obtain an acidified oil, (2) adding 200% (v/w) methanol [containing 1.5% (weight/weight) concentrated sulfuric acid] into 10 g of the acidified oil, reacting at 60° for 2h, removing the upper aqueous phase, washing the lower oil phase, washing with water and drying to obtain the first

esterification products, (3) repeating Step 2 with 100% (v/w) methanol containing 1% (weight/weight) concentrated sulfuric acid to obtain the second esterification products, (4) adding 20% (v/w) methanol (containing 0.5% (weight/weight) sodium methanolate) into 10 g of the second esterification products, reacting at 65° for 1h, standing in a separatory funnel, removing the lower glycerin phase, washing the upper layer with water, and drying to obtain 9 g of the crude fatty acid Me esters, (5) performing mol. distillation on 100 g of the crude fatty acid Me esters at 140°-160°, 0.03 torr, and 150 rpm to obtain 10 g of the heavy components (mainly containing residual glycerides and pigments) and 90 g of the light components (mainly containing 95% fatty acid Me esters, namely, biodiesel oil), and (6) diluting 100 g of glycerin obtained in Step 4 with 20 mL methanol, dropping phosphoric acid while stirring to neutralize the residual alkalis and adjust pH to 6-7, centrifuging to form 3 layers, rotary-evaporating the middle layer to remove methanol, and refining to obtain 80 g of glycerin with a purity ≥98%. The method has the advantages of high efficiency, short reaction time, and high product quality, and can recycle the byproduct glycerin, thus increasing the added value of the products and decreasing the costs.

L7 ANSWER 4 OF 4 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER:	1995:403528 CAPLUS
DOCUMENT NUMBER:	123:199711
ORIGINAL REFERENCE NO.:	123:35677a,35680a
TITLE:	Glycerin saturated fatty acid and (meth)acrylic acid esters, their manufacture, and manufacture of (meth)acrylic acid esters of alcohols
INVENTOR(S):	Hatsutori, Mitsuo; Maeda, Juichi; Mori, Hiroyuki
PATENT ASSIGNEE(S):	Fuji Oil Co Ltd, Japan
SOURCE:	Jpn. Kokai Tokkyo Koho, 5 pp. CODEN: JKXXAF
DOCUMENT TYPE:	Patent
LANGUAGE:	Japanese
FAMILY ACC. NUM. COUNT:	1
PATENT INFORMATION:	

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
JP 06336457	A	19941206	JP 1993-323734		19931222
PRIORITY APPLN. INFO.:			JP 1993-323734	A	19931222
			JP 1993-95358		19930330

AB Glycerol-based products having ≥1 (meth)acrylate ester group and ≥1 fatty ester are manufactured by reaction of triglycerides with (meth)acrylic acid and/or (meth)acrylic acid derivs. in the presence of stabilized lipase (S-L). Another procedure giving (meth)acrylic acid esters by reaction of C12-22 alcs. with (meth)acrylic acid and/or (meth)acrylic acid derivs. in the presence of S-L is also claimed. Thus, a reaction liquid prepared by contacting a mixture of 56 parts hardened coco oil and 56 parts Me acrylate (I) to a column containing 1 part SP 435 (S-L) at 40° and 5 mL/h was heated at 100° for evaporation of I which was to recycle and heated at 250° while removing fatty acid Me esters to give a product composed of matrix triglyceride 4.0, glycerol fatty ester

monoacrylate 23.5%, glycerol fatty ester diacrylate 44.0, and glycerol triacrylate 28.5%. This product gave copolymers with monomers such as I and methacrylic acid with excellent flexibility.

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=> d his

     (FILE 'HOME' ENTERED AT 18:12:10 ON 17 AUG 2010)

     FILE 'CAPLUS, AGRICOLA' ENTERED AT 18:12:26 ON 17 AUG 2010
L1            11 S RECYCLE (S) (FATTY (A) ACID (A) METHYL (A) ESTER)
L2             5 S L1 (L) (TRANSESTERIFICATION OR ESTERIFICATION)
L3             0 S RECYCLE (7W) (FATTY (A) ACID (A) AKLYS (A) ESTER)
L4             1 S RECYCLE (10W) (FATTY (A) ACID (A) ALKYL (A) ESTER)
L5             0 S RETURN (S) (FATTY (A) ACID (A) ALKYL (A) ESTER)
L6            18 S RECYCLE (L) (FATTY (W) ACID (W) METHYL (W) ESTER#)
L7             4 S L6 AND ESTERIFICATION

=> s esterification (1) (fat or oil) (1) recycle
L8          26 ESTERIFICATION (L) (FAT OR OIL) (L) RECYCLE

=> s l8 and (recycle (s) ester)
L9           2 L8 AND (RECYCLE (S) ESTER)

=> d l9 1-2 ibib abs

L9   ANSWER 1 OF 2  CAPLUS  COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:         2009:1151554  CAPLUS
DOCUMENT NUMBER:          151:428243
TITLE:                    Production of biodiesel fuel with pericarpium
                          zanthoxyli seed oil and cyclohexylamine catalyst
INVENTOR(S):              Liang, Wensheng; Li, Xiuqin; Li, Wen; Ni, Junhui
PATENT ASSIGNEE(S):       Hancheng Wangyuan Generative Fuel Co., Ltd., Peop.
                          Rep. China
SOURCE:                   Faming Zhuanli Shenqing Gongkai Shuomingshu, 8pp.
                          CODEN: CNXXEV
DOCUMENT TYPE:            Patent
LANGUAGE:                 Chinese
FAMILY ACC. NUM. COUNT:   1
PATENT INFORMATION:

     PATENT NO.          KIND   DATE        APPLICATION NO.        DATE
     --------------      ----   --------    -------------------    --------
     CN 101531914         A     20090916    CN 2009-10022105       20090420
PRIORITY APPLN. INFO.:                      CN 2009-10022105       20090420
AB   The title method comprises: (1) dehydrating and drying Pericarpium
     Zanthoxyli seed oil, mixing with methanol and catalyst
     (cyclohexylamine), pumping to a reaction kettle, wherein the mass ratio of
     Pericarpium Zanthoxyli seed oil to methanol is 10:(2-3), and
     carrying out an esterification reaction at normal pressure and
     70-84°, (2) recycling methanol and cyclohexylamine, and recycling
     glycerol from the bottom of the reaction kettle, and (3) vacuum-distilling at
     1-6 mmHg and 160-280° to recycle fatty acid Me
     ester obtained from step 1, and mixing wax in Pericarpium
     Zanthoxyli seed oil and 400-mesh non-hydrogen catalyst at normal
     pressure and 350-430° to carry out catalysis and pyrolysis
     reaction, wherein wax in Pericarpium Zanthoxyli seed oil is
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decomposed into small mol. biodiesel fuel, and colloid in Pericarpium Zanthoxyli seed oil is carbonized and coked into vegetable oil coke. The invented method has the advantages of simple operation, rapid reaction speed, high yield of biodiesel fuel with low solidifying point, and no secondary pollution.

L9 ANSWER 2 OF 2 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2003:259768 CAPLUS
DOCUMENT NUMBER: 138:273302
TITLE: Method and apparatus for preparing fatty acid esters
INVENTOR(S): Goto, Fumisato; Sasaki, Toshio; Takagi, Katsuyuki
PATENT ASSIGNEE(S): Sumitomo Chemical Company Limited, Japan
SOURCE: Eur. Pat. Appl., 14 pp.
CODEN: EPXXDW
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
EP 1298192	A1	20030402	EP 2001-130903	20011228
EP 1298192	B1	20050413		
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, SI, LT, LV, FI, RO, MK, CY, AL, TR				
JP 2003104935	A	20030409	JP 2001-302900	20010928
AU 2001097478	A	20030403	AU 2001-97478	20011227
BR 2001006511	A	20030909	BR 2001-6511	20011227
CA 2366414	A1	20030328	CA 2001-2366414	20011228
CA 2366414	C	20091215		
AT 293158	T	20050415	AT 2001-130903	20011228
US 20030065202	A1	20030403	US 2001-29851	20011231
US 6812359	B2	20041102		
CN 1408701	A	20030409	CN 2001-142887	20011231
CN 1230413	C	20051207		

PRIORITY APPLN. INFO.: JP 2001-302900 A 20010928
ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
AB Preparing a fatty acid ester while suppressing the discharge of unreacted reactants and/or intermediate products, comprises reacting fats and oils with a monohydric alc. in a reactor under conditions where the monohydric alc. is in a supercrit. state, where a reaction mixture containing unreacted reactants and/or intermediate products is recycled to the reactor. Also, fatty acid ester may optionally isolated from the reaction mixture prior to recycling reaction mixture to the reactor.
OS.CITING REF COUNT: 16 THERE ARE 16 CAPLUS RECORDS THAT CITE THIS RECORD (17 CITINGS)
REFERENCE COUNT: 7 THERE ARE 7 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d his

(FILE 'HOME' ENTERED AT 18:12:10 ON 17 AUG 2010)

FILE 'CAPLUS, AGRICOLA' ENTERED AT 18:12:26 ON 17 AUG 2010
L1 11 S RECYCLE (S) (FATTY (A) ACID (A) METHYL (A) ESTER)
L2 5 S L1 (L) (TRANSESTERIFICATION OR ESTERIFICATION)

```
L3             0 S RECYCLE (7W) (FATTY (A) ACID (A) AKLYS (A) ESTER)
L4             1 S RECYCLE (10W) (FATTY (A) ACID (A) ALKYL (A) ESTER)
L5             0 S RETURN (S) (FATTY (A) ACID (A) ALKYL (A) ESTER)
L6            18 S RECYCLE (L) (FATTY (W) ACID (W) METHYL (W) ESTER#)
L7             4 S L6 AND ESTERIFICATION
L8            26 S ESTERIFICATION (L) (FAT OR OIL) (L) RECYCLE
L9             2 S L8 AND (RECYCLE (S) ESTER)

=> s transesterification (l) (fat or oil) (l) recycle
L10           29 TRANSESTERIFICATION (L) (FAT OR OIL) (L) RECYCLE

=> s l10 not l8
L11           21 L10 NOT L8

=> s l0 and recycle (s) product
L12            1 L0 AND RECYCLE (S) PRODUCT

=> d l12 ibib abs

L12  ANSWER 1 OF 1  AGRICOLA  Compiled and distributed by the National
     Agricultural Library of the Department of Agriculture of the United States
     of America.  It contains copyrighted materials.  All rights reserved.
     (2010) on STN
ACCESSION NUMBER:         2009:59989  AGRICOLA
DOCUMENT NUMBER:          IND44189921
TITLE:                    Biohydrogen production in a three-phase fluidized bed
                          bioreactor using sewage sludge immobilized by
                          ethylene-vinyl acetate copolymer.
AUTHOR(S):                Lin, Chi-Neng; Wu, Shu-Yii; Chang, Jian-Sheng; Chang,
                          Jo-Shu
AVAILABILITY:             DNAL (TD930.A32)
SOURCE:                   Bioresource technology, 2009 July Vol. 100, no. 13 p.
                          3298-3301
                          Publisher: [New York, NY]: Elsevier Ltd.
                          ISSN: 0960-8524
NOTE:                     Includes references
DOCUMENT TYPE:            Article; (ELECTRONIC RESOURCE)
FILE SEGMENT:             Other US
LANGUAGE:                 English
AB   Ethylene-vinyl acetate (EVA) copolymer was used to immobilize H
     -producing sewage sludge for H   production in a three-phase fluidized bed
     reactor (FBR). The FBR with an immobilized cell packing ratio of 10% (v/v)
     and a liquid recycle rate of 5l/min (23% bed expansion) was
     optimal for dark H   fermentation. The performance of the FBR reactor fed
     with sucrose-based synthetic medium was examined under various sucrose
     concentration (C so) and hydraulic retention time (HRT). The best
     volumetric H   production rate of 1.80 l0.02 H   l/h/l occurred
     at C so =40g COD/l and 2h HRT, while the optimal H   yield (4.26
     l0.04mol H  /mol sucrose) was obtained at C so =20g COD/l and 6h
     HRT. The H   content in the biogas was stably maintained at 40% or above.
     The primary soluble metabolites were butyric acid and acetic acid, as both
     products together accounted for 74-83% of total soluble microbial
     products formed during dark H   fermentation.


=> s l10 and (recycle (s) product)
L13            7 L10 AND (RECYCLE (S) PRODUCT)
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=> d l13 1-7 ibib abs

L13 ANSWER 1 OF 7 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2010:610328 CAPLUS
DOCUMENT NUMBER: 152:594626
TITLE: Industrial method for preparing biodiesel oil from waste oil
INVENTOR(S): Zheng, Pingan; Zheng, Zhiquan
PATENT ASSIGNEE(S): Qingdao Fresh Bio-energy Technology Development Co., Ltd., Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 6pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101705155	A	20100512	CN 2009-10229940	20091107

PRIORITY APPLN. INFO.: CN 2009-10229940 20091107

AB The method comprises adding a waste oil (98.5-99.0 wt%) and a solid acid catalyst (1.0-1.5 wt%) into a reactor, controlling the reaction temperature at 72-76°C, introducing methanol gas, where most methanol will distill at the same time, stirring for 60-240 min for esterification while supplementing methanol, standing still, discharging the lower acid catalyst and impurities; putting the esterified liquid 70-80 wt%, methanol 15-25 wt% and a solid base catalyst 1-5 wt% into a reactor, controlling the reaction temperature at 64-70°C, transesterification under stirring and refluxing for 30-120 min; and standing or centrifugating, where the upper layer is the prepared biol. diesel oil and the unreacted methanol, the lower layer is glycerol and the solid base catalyst, discharging the lower layer, separating the solid base, refining glycerol, distilling the upper layer, recovering the residual methanol, and washing and refining the biodiesel oil. The waste grease is from peanut oil leftovers, restaurant waste oils and waste animal oil and fat. The solid acid catalyst is one of SiO2, SiO-Al2O3, B2O3-Al2O3 or TiO2-SiO2. The solid base catalyst is one of CaO, MgO-Al2O3, ZnO, CaO-MgO or CaO-ZnO. The method recycles resources, reduces the pollution, has low cost, high economic benefit, stable process, broad application range, and stable and uniform product quality, is environmentally friendly, has high product yield, and is suitable for large-scale production

L13 ANSWER 2 OF 7 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2009:1593407 CAPLUS
DOCUMENT NUMBER: 152:173132
TITLE: Integrated Process Modeling and Product Design of Biodiesel Manufacturing
AUTHOR(S): Chang, Ai-Fu; Liu, Y. A.
CORPORATE SOURCE: SINOPEC/AspenTech Center of Excellence in Process System Engineering, Department of Chemical Engineering, Virginia Polytechnic Institute and State University, Blacksburg, VA, 24061, USA
SOURCE: Industrial & Engineering Chemistry Research (2010), 49(3), 1197-1213

CODEN: IECRED; ISSN: 0888-5885
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Biodiesel, i.e., a mixture of fatty acid Me esters (FAMEs), produced from reacting triglyceride with methanol by alkali-catalyzed transesterification, has attracted much attention as an important renewable energy source. To aid in the optimization of biodiesel manufacturing, a number of published studies have applied com. process simulators to quantify the effects of operating conditions on the process performance. Significantly, all of the reported simulation models are design models for new processes by fixing some level of equipment performance such as the conversion of transesterification reaction. Most models assume the feed oil as pure triolein and the biodiesel fuel as pure Me oleate, and pay insufficient attention to the feed oil characterization, thermophys. property estimation, rigorous reaction kinetics, phase equilibrium for separation and purification units, and prediction of essential biodiesel fuel qualities. This paper presents first a comprehensive review of published literature pertaining to developing an integrated process modeling and product design of biodiesel manufacturing, and identifies those deficient areas for further development. This paper then presents new modeling tools and a methodol. for the integrated process modeling and product design of an entire biodiesel manufacturing train (including transesterification reactor, methanol recovery and recycle , water wash, biodiesel recovery, glycerol separation, etc.). We demonstrate the methodol. by simulating an integrated process to predict reactor and separator performance, stream conditions, and product qualities with different feedstocks. The methodol. is effective not only for the rating and optimization of an existing biodiesel manufacturing, but also for the design of a new process to produce biodiesel with specified fuel properties.
REFERENCE COUNT: 82 THERE ARE 82 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 3 OF 7 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2009:1074371 CAPLUS
DOCUMENT NUMBER: 153:208750
TITLE: Production of biodiesel from acid waste lard
AUTHOR(S): Dias, Joana M.; Alvim-Ferraz, Maria C. M.; Almeida, Manuel F.
CORPORATE SOURCE: LEPAE, Departamento de Engenharia Quimica, Faculdade de Engenharia, Universidade do Porto, Oporto, 4200-465, Port.
SOURCE: Bioresource Technology (2009), 100(24), 6355-6361
CODEN: BIRTEB; ISSN: 0960-8524
PUBLISHER: Elsevier Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English
AB The objective of the present work was: (i) to enable biodiesel production from acid waste lard; (ii) to study the esterification reaction as possible pre-treatment at different temps., catalyst amount and reaction times; (iii) to evaluate biodiesel quality according to EN 14214 after basic transesterification of the pre-treated fat; and (iv) to predict the impact of using such waste as raw material in mixture with soybean oil. Temperature and catalyst amount were the most important

reaction conditions which mostly affected biodiesel quality, namely viscosity and purity. The selected pre-treatment conditions were 65 °C, 2.0 wt% H2SO4 and 5 h, which allowed obtaining a product with a viscosity of 4.81 mm2 s-1 and a purity of 99.6 wt%. The proposed pre-treatment was effective to enable acid wastes as single raw materials for biodiesel production with acceptable quality; however, low yields were obtained (65 wt%). Alkali transesterification of a mixture of waste lard and soybean oil resulted in a product with a purity of 99.8 wt% and a yield of 77.8 wt%, showing that blending might be an interesting alternative to recycle such wastes. Also, because in addition to using conventional and relatively economical processes, some biodiesel properties depending on the raw material composition (such as the iodine value) might even be improved.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

REFERENCE COUNT: 16 THERE ARE 16 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L13 ANSWER 4 OF 7 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1999:254106 CAPLUS

DOCUMENT NUMBER: 130:268823

TITLE: Transesterification method for preparation of C12-18 fatty acid lower alkyl esters with reduced glycerin and free fatty acid content

INVENTOR(S): Kubersky, Hans Peter; Schleper, Bernhard; Hourticolon, Roland; Klein, Norbert

PATENT ASSIGNEE(S): Henkel K.-G.a.A., Germany

SOURCE: Ger., 4 pp.
CODEN: GWXXAW

DOCUMENT TYPE: Patent

LANGUAGE: German

FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19803053	C1	19990415	DE 1998-19803053	19980128

PRIORITY APPLN. INFO.: DE 1998-19803053 19980128

AB C12-18 fatty acid lower alkyl esters (e.g., palm kernel oil Me esters) with reduced glycerin and free fatty acid content are prepared by the catalytic transesterification of fats and glyceridic oils with lower alcs. in a process comprising: (A) subjecting the crude C6-22 ester product to strong shearing in a tubular system with a 1-10% recycle stream based on the amount of ester-water mixed; (B) separating a part of the mixture and removing the organic from the aqueous phase; (C) the raffinated C6-22 ester is subjected to fractional distillation; (D) the obtained C12-18 ester fraction is fed into a 2-tube system and mixed with 1-10% water; and (E) a part of the mixture is phase separated and the product recovered from the organic phase.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L13 ANSWER 5 OF 7 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 1980:57088 CAPLUS

DOCUMENT NUMBER: 92:57088

ORIGINAL REFERENCE NO.: 92:9471a,9474a

TITLE: Liquid edible oil from palm oil or similar oils
INVENTOR(S): Koslowsky, Ladislav
PATENT ASSIGNEE(S): H.L.S. Ltd. Industrial Engineering Co., Israel
SOURCE: Israeli, 35 pp.
CODEN: ISXXAQ
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
IL 49581	A	19790131	IL 1976-49581	19760514
PRIORITY APPLN. INFO.:			IL 1976-49581 A	19760514

AB A liquid salad oil with good cold stability was prepared from palm oil by transesterifying the oil with a C1-3 alkyl ester of a C18 unsatd. fatty acid, distilling the product, and fractionating the distillate to recycle the C18 unsatd. ester and to obtain a C16 saturated fatty acid ester fraction. The latter was chlorinated and dehydrochlorinated and distilled to give a C16 unsatd. fatty acid ester, which was transesterified with the residue from the 1st transesterification and distillation The product was fractionated by distillation, and the distillate was separated into C18 and C16 fractions, which were recycled to the 1st and 2nd transesterifications, resp., and a liquid oil, which was winterized to give the desired salad oil. The product had good stability in frying also. Thus, 100 parts palm oil (I number 53) was transesterified with 150 parts by weight of a mixture of Et esters of the unsatd. fatty acids of palm oil and 0.2 parts NaOMe catalyst at 60°, and the product was treated as described to give 100 parts oil (I number 78.8), which was winterized at 8° for 6 h to give 89 parts of liquid oil with I number 80. This oil had about 80% unsatd. fatty acids (palmitoleic, oleic, and linoleic).

L13 ANSWER 6 OF 7 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2010) on STN
ACCESSION NUMBER: 2009:152831 AGRICOLA
DOCUMENT NUMBER: IND44280617
TITLE: Rapid microwave-assisted transesterification of yellow horn oil to biodiesel using a heteropolyacid solid catalyst.
AUTHOR(S): Zhang, Su; Zu, Yuan-Gang; Fu, Yu-Jie; Luo, Meng; Zhang, Dong-Yang; Efferth, Thomas
AVAILABILITY: DNAL (TD930.A32)
SOURCE: Bioresource technology, 2010 Feb. Vol. 101, no. 3 p. 931-936
Publisher: [New York, NY]: Elsevier Ltd.
ISSN: 0960-8524
NOTE: Includes references
DOCUMENT TYPE: Article; (ELECTRONIC RESOURCE)
FILE SEGMENT: Other US
LANGUAGE: English
AB An efficient microwave-assisted transesterification (MAT) technique was developed to prepare biodiesel from yellow horn (Xanthoceras

sorbifolia Bunge.) oil with a heteropolyacid (HPA) catalyst namely Cs . H . PW O . A study for optimizing the reaction conditions such as reaction temperature, time, molar ratio of methanol/ oil, catalyst amount, and recycle number of catalyst has been performed. The maximum yield of fatty acid methyl esters (FAMEs) reached 96.22% under optimal conditions of temperature 60 C, 10min, molar ratio of methanol/oil 12:1, 1% (w/w of oil) catalyst and minimum recycle number nine times. The final product of biodiesel, obtained after the new catalyzed process, was analyzed by gas chromatography. The results showed that the Cs . H . PW O heterogeneous acid catalyst had higher efficiency for transesterification under microwave irradiation compared with the conventional method. The product properties of yellow horn biodiesel are found to be in agreement with EN 14214 standard.

L13 ANSWER 7 OF 7 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2010) on STN

ACCESSION NUMBER: 2009:141874 AGRICOLA
DOCUMENT NUMBER: IND44270684
TITLE: Production of biodiesel from acid waste lard.
AUTHOR(S): Dias, Joana M.; Alvim-Ferraz, Maria C.M.; Almeida, Manuel F.
AVAILABILITY: DNAL (TD930.A32)
SOURCE: Bioresource technology, 2009 Dec. Vol. 100, no. 24 p. 6355-6361
Publisher: [New York, NY]: Elsevier Ltd.
ISSN: 0960-8524
NOTE: Includes references
DOCUMENT TYPE: Article; (ELECTRONIC RESOURCE)
FILE SEGMENT: Other US
LANGUAGE: English

AB The objective of the present work was: (i) to enable biodiesel production from acid waste lard; (ii) to study the esterification reaction as possible pre-treatment at different temperatures, catalyst amount and reaction times; (iii) to evaluate biodiesel quality according to EN 14214 after basic transesterification of the pre-treated fat ; and (iv) to predict the impact of using such waste as raw material in mixture with soybean oil. Temperature and catalyst amount were the most important reaction conditions which mostly affected biodiesel quality, namely viscosity and purity. The selected pre-treatment conditions were 65 C, 2.0wt% H SO and 5h, which allowed obtaining a product with a viscosity of 4.81mm o s (British pound) and a purity of 99.6wt%. The proposed pre-treatment was effective to enable acid wastes as single raw materials for biodiesel production with acceptable quality; however, low yields were obtained (65wt%). Alkali transesterification of a mixture of waste lard and soybean oil resulted in a product with a purity of 99.8wt% and a yield of 77.8wt%, showing that blending might be an interesting alternative to recycle such wastes. Also, because in addition to using conventional and relatively economical processes, some biodiesel properties depending on the raw material composition (such as the iodine value) might even be improved.

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     (FILE 'HOME' ENTERED AT 18:12:10 ON 17 AUG 2010)

     FILE 'CAPLUS, AGRICOLA' ENTERED AT 18:12:26 ON 17 AUG 2010
L1           11 S RECYCLE (S) (FATTY (A) ACID (A) METHYL (A) ESTER)
L2            5 S L1 (L) (TRANSESTERIFICATION OR ESTERIFICATION)
L3            0 S RECYCLE (7W) (FATTY (A) ACID (A) AKLYS (A) ESTER)
L4            1 S RECYCLE (10W) (FATTY (A) ACID (A) ALKYL (A) ESTER)
L5            0 S RETURN (S) (FATTY (A) ACID (A) ALKYL (A) ESTER)
L6           18 S RECYCLE (L) (FATTY (W) ACID (W) METHYL (W) ESTER#)
L7            4 S L6 AND ESTERIFICATION
L8           26 S ESTERIFICATION (L) (FAT OR OIL) (L) RECYCLE
L9            2 S L8 AND (RECYCLE (S) ESTER)
L10          29 S TRANSESTERIFICATION (L) (FAT OR OIL) (L) RECYCLE
L11          21 S L10 NOT L8
L12           1 S L0 AND RECYCLE (S) PRODUCT
L13           7 S L10 AND (RECYCLE (S) PRODUCT)

=> s l10 not l13
L14         22 L10 NOT L13

=> d l14 1-10 ibib abs

L14  ANSWER 1 OF 22  CAPLUS  COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:         2010:342513  CAPLUS
TITLE:                    Biodiesel catalyst made from fish scale
AUTHOR(S):                Zheng, Xinsheng; Huang, Donghe; Xue, Yang; Fu, Lei
CORPORATE SOURCE:         Department of Chemistry, Huazhong Agriculture
                          University, Wuhan, 430070, Peop. Rep. China
SOURCE:                   Abstracts of Papers, 239th ACS National Meeting, San
                          Francisco, CA, United States, March 21-25, 2010 (2010)
                          , FUEL-231.  American Chemical Society: Washington, D.
                          C.
                          CODEN: 69MML8
DOCUMENT TYPE:            Conference; Meeting Abstract; (computer optical disk)
LANGUAGE:                 English
AB   The biodiesel catalyst derived from waste fish scale was prepared by
     incomplete carbonization of fish scale, soakage of KF solution onto the
     resultant and followed by activation at a desired temperature  The fish scale
     catalyst was characterized by thermogravimetric anal., scanning electron
     microscope, X-ray diffraction and Fourier transform IR spectrometer.  The
     results indicated that the conversion of rapeseed oil to
     biodiesel achieved 81.7% using the fish scale catalyst at reaction time
     1h, catalyst dosage 5wt% (based on rapeseed oil mass), molar
     ratio of methanol to rapeseed oil 12:1 and reaction temperature 338K.
     The activity of the catalyst for the transesterification
     reaction may be from the active sites formed by the reaction of
     incompletely carbonized fish scale with KF in the synthesis process.
     Biodiesel made with fish scale catalyst can recycle the waste
     and make the process of biodiesel production more environmentally friendly.

L14  ANSWER 2 OF 22  CAPLUS  COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER:         2010:256071  CAPLUS
TITLE:                    Preparation of biodiesel from Litsea cubeba kernel oil
AUTHOR(S):                Cai, Hai-qing; Zhong, Shi-an; Ai, Hai-dong
CORPORATE SOURCE:         School of Chemistry and Chemical Engineering, Central
                          South University, Changsha, 410083, Peop. Rep. China
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SOURCE: Zhongnan Daxue Xuebao, Ziran Kexueban (2009), 40(6), 1517-1521
CODEN: ZDXZAC; ISSN: 1672-7207
PUBLISHER: Zhongnan Daxue Xuebao Ziran Kexueban Bianji Weiyuanhui
DOCUMENT TYPE: Journal
LANGUAGE: Chinese

AB The production technol. of biodiesel from litsea cubeba kernel oil with solid acid-esterification and phase transfer catalyst-transesterification was studied. First, litsea cubeba kernel oil was esterified with methanol catalyzed by solid acids SO42-/ZrO2, and then the first reaction product was transesterified with methanol catalyzed by the phase transfer catalyst of hexadecyl-trimethyl-ammonium bromide (CTMAB)/NaOH. The results show that the optimal parameters of esterification are as follows: 4% of SO42-/ZrO2, molar ratio of methanol to litsea cubeba kernel oil 10:1, 68 °C of reaction temperature and 4 h of reaction time, the acid value decreases to 2.52 mg/g. Compared with the traditional acidic-catalyzed method, this method has the advantages of no acid proof equipment, easy to recycle catalyst and no acidic waste water emission. The optimal parameters of transesterification are as follows: 25 °C of reaction temperature, 0.5% of hexadecyl-trimethyl-ammonium bromide, 1% of NaOH, molar ratio of methanol to the oil 6:1 and 15 min of reaction time. The ester exchanging rate is 97.6%. This method adopts phase transfer catalyst and produces industry prospect, which has many advantages such as energy-saving and time-saving under room temperature

L14 ANSWER 3 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2010:198028 CAPLUS
DOCUMENT NUMBER: 152:572750
TITLE: The transesterification of rapeseed and waste sunflower oils: Mass-transfer and kinetics in a laboratory batch reactor and in an industrial-scale reactor/separator setup
AUTHOR(S): Klofutar, B.; Golob, J.; Likozar, B.; Klofutar, C.; Zagar, E.; Poljansek, I.
CORPORATE SOURCE: ZORD Slovenija, Ljubljana, 1000, Slovenia
SOURCE: Bioresource Technology (2010), 101(10), 3333-3344
CODEN: BIRTEB; ISSN: 0960-8524
PUBLISHER: Elsevier Ltd.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB The transesterification of rapeseed oil (RO) and waste sunflower oil (SO) was carried out with methanol in the presence of KOH catalyst. The transesterification of tri-acylglycerols was first conducted in a batch reactor. The effect of temperature on the reaction rate was studied at a constant molar ratio of the alc. to tri-acylglycerols (6:1) and for a constant concentration of the catalyst (1.0%).
Size-exclusion chromatog. and 1H NMR spectroscopy were used to quant. monitor the transesterification reaction. The mass-transfer coefficient of the tri-acyl glycerols during the initial transesterification stage was 0.2-1.2 + 10-5 m/min-1, depending on the type of oil and temperature Calculated activation energy implied that at higher temps., the formation of mono-acyl glycerols and glycerol was favored for SO (93 kJ/mol for the forward and 48 kJ/mol for the backward reaction) and RO (47 kJ/mol for the forward and 36 kJ/mol for the backward reaction), resp. For the continuous industrial

reactor/separator setup, the optimum methanol recycle ratio was 0.0550. The Me esters were characterized toward use as biodiesel.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

REFERENCE COUNT: 31 THERE ARE 31 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 4 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2009:1314429 CAPLUS

TITLE: Rapid microwave-assisted transesterification of yellow horn oil to biodiesel using a heteropolyacid solid catalyst

AUTHOR(S): Zhang, Su; Zu, Yuan-Gang; Fu, Yu-Jie; Luo, Meng; Zhang, Dong-Yang; Efferth, Thomas

CORPORATE SOURCE: Key Laboratory of Forest Plant Ecology, Ministry of Education, Northeast Forestry University, Harbin, 150040, Peop. Rep. China

SOURCE: Bioresource Technology (2009), Volume Date 2010, 101(3), 931-936
CODEN: BIRTEB; ISSN: 0960-8524

PUBLISHER: Elsevier Ltd.

DOCUMENT TYPE: Journal

LANGUAGE: English

AB An efficient microwave-assisted transesterification (MAT) technique was developed to prepare biodiesel from yellow horn (Xanthoceras sorbifolia Bunge.) oil with a heteropolyacid (HPA) catalyst namely Cs2.5H0.5PW12O40. A study for optimizing the reaction conditions such as reaction temperature, time, molar ratio of methanol/oil, catalyst amount, and recycle number of catalyst has been performed. The maximum yield of fatty acid Me esters (FAMEs) reached 96.22% under optimal conditions of temperature 60 °C, 10 min, molar ratio of methanol/ oil 12:1, 1% (weight/weight of oil) catalyst and min. recycle number nine times. The final product of biodiesel, obtained after the new catalyzed process, was analyzed by gas chromatog. The results showed that the Cs2.5H0.5PW12O40 heterogeneous acid catalyst had higher efficiency for transesterification under microwave irradiation compared with the conventional method. The product properties of yellow horn biodiesel are found to be in agreement with EN 14214 standard

OS.CITING REF COUNT: 4 THERE ARE 4 CAPLUS RECORDS THAT CITE THIS RECORD (4 CITINGS)

REFERENCE COUNT: 34 THERE ARE 34 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 5 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN

ACCESSION NUMBER: 2009:1119786 CAPLUS

DOCUMENT NUMBER: 151:385454

TITLE: Combination of Fractional Factorial and Doehlert Experimental Designs in Biodiesel Production: Ethanolysis of Raphanus sativus L. var. oleiferus Stokes Oil Catalyzed by Sodium Ethoxide

AUTHOR(S): Valle, Pedro W. P. A.; Rezende, Thais F.; Souza, Rosangela A.; Fortes, Isabel C. P.; Pasa, Vanya M. D.

CORPORATE SOURCE: Laboratorio de Ensaios de Combustiveis, Departamento de Quimica, Instituto de Ciencias Exatas, Universidade Federal de Minas Gerais, Minas Gerais, 31270-901, Brazil

SOURCE: Energy & Fuels (2009), 23(10), 5219-5227

CODEN: ENFUEM; ISSN: 0887-0624
PUBLISHER: American Chemical Society
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Fodder radish-Raphanus sativus L. var. oleiferus Stokes-oil was regarded as an interesting option to produce biodiesel, because the oil cannot be used for human consumption, the seeds have high oil content, and the cost of production is low. Furthermore, the plant was used for green fertilization during the interval between harvests of other crops, due to its rapid development as well as its great ability to recycle nutrients. The content of free fatty acids in the crude oil is less than 0.5%, which makes it appropriate for basic catalyzed synthesis. However, basic catalyzed synthesis is sensitive to the presence of water in the reaction environment. This study proposes the optimization of biodiesel synthesis using sodium ethoxide (sodium ethylate) as a catalyst, with the purpose of minimizing water formation during reaction, increase efficiency, and thus carry out transesterification in a single step. Ethanol was used instead of the methylic route, aiming at the production of an entirely renewable and environmentally preferable fuel. The expts. were proposed and carried out using a combination of fractional factorial design and Doehlert design, to allow an extensive study of the process variables with a min. of expts. Intense levels of agitation and high temps. proved to be inadequate to reach an effective reaction. At optimum conditions the ester content reached approx. 97.9%, which along with several other phys. chemical assays confirm the good quality of the product and that the synthesis of fodder radish crude oil can be performed in a single step efficiently.
OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)
REFERENCE COUNT: 36 THERE ARE 36 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 6 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2009:798464 CAPLUS
DOCUMENT NUMBER: 151:152790
TITLE: Gasification reactor and method for pretreatment of biodiesel materials using the same
INVENTOR(S): Yang, Yeong Gon; Kim, Yeong Hun; Kim, Baek Ho; Kim, Nam Seon; Park, Jong Gil; Park, Hyeong Sun
PATENT ASSIGNEE(S): Nexsenco Co., Ltd., S. Korea
SOURCE: Repub. Korean Kongkae Taeho Kongbo, 16pp. CODEN: KRXXA7
DOCUMENT TYPE: Patent
LANGUAGE: Korean
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
KR 2009069017	A	20090629	KR 2007-136855	20071224
KR 959384	B1	20100524		

PRIORITY APPLN. INFO.: KR 2007-136855 20071224
AB The title method comprises the steps of: (1) placing dehydrated fats and oils in a gasification reactor, (2) mixing alcs. and acid catalysts, gasifying with an evaporator at 65-105°C, and feeding and injecting into the gasification reactor via a tube, (3) stirring and mixing the fats and oils, alcs. and acid

catalysts to perform transesterification and esterification for preparation of a mixture containing alkyl ester, (4) placing the mixture into a multi-tray reactor, then performing transesterification and esterification, and aging, (5) feeding the aged mixture into the gasification reactor again, and performing the steps 3 and 4 repeatedly for 5-8 h, and (6) standing to sep. glycerin via difference of sp. gr., and producing bio-diesel raw materials without glycerin. The title gasification reactor is intermittent multi-target glass lined reactor, and contains a multi-tray reactor. The dehydrated fats and oils contain more than one of animal fatty acids and oil acids. The method has increased mixing efficiency of reactants, can pretreat via a single-step reaction, and can use acid oils in the oils, so as to increase the yield of bio-diesel. The method can also recycle and reuse alcs. in the pretreatment process, and is economical.

L14 ANSWER 7 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2009:719997 CAPLUS
DOCUMENT NUMBER: 151:104930
TITLE: Manufacture of biodiesel oil and portable production device
INVENTOR(S): Yang, Fangxiao; Ma, Yujiu; Wang, Jianxun; Zhu, Jianhang
PATENT ASSIGNEE(S): Qingdao Institute of Bioenergy and Bioprocess Technology, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 26pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101451071	A	20090610	CN 2007-10178781	20071205

PRIORITY APPLN. INFO.: CN 2007-10178781 20071205

AB The title production method comprises the steps of: (1) heating to dissolve raw material grease, filtering to remove insol. impurities, adding glycerol (mol. ratio of glycerol to free fatty acid in raw material grease is 0.3-1.5), and performing pre-esterification reaction at 150-350°C and 350-600 mmHg, (2) mixing with methanol (mol. ratio of methanol to glyceride is (4-9):1), adding a methanol solution of NaOH or KOH as catalyst (NaOH or KOH is 0.8-2 weight% of glyceride), and performing transesterification at 50-80°C in inert gas, (3) centrifuging to obtain crude Me ester light phase and crude glycerol heavy phase, vacuum-distilling the crude Me ester light phase in inert gas to obtain methanol, biol. diesel oil product, and asphalt, washing the crude glycerol heavy phase, neutralizing the basic catalyst, and vacuum-distilling to obtain methanol and glycerol, and (4) returning methanol obtained in step 3 to step 2 for reaction, and returning glycerol to step 1 for reaction. The title movable production device integrates a raw material pre-treatment unit, a pre-esterification unit, a transesterification unit, and a separation recycle refinement unit in a movable platform, and can continuously automatically produce biol. diesel oil. The device and the method are appropriate for waste grease with large fluctuation of acidity value from dispersive resources such as acidified oil and drainage oil,

woody oil material, and plant raw oil. The method has the advantages of simple process and high production efficiency.

L14 ANSWER 8 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2007:1206583 CAPLUS
DOCUMENT NUMBER: 147:524193
TITLE: Transesterification method or preparing biodiesel oil using dehydrated gypsum absorbent
INVENTOR(S): Yang, Yifang
PATENT ASSIGNEE(S): Wujiang Fangxia Company Information Consulting Co., Ltd., Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 3pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 101058779	A	20071024	CN 2007-10023062	20070530

PRIORITY APPLN. INFO.: CN 2007-10023062 20070530

AB The title method comprises (1) carrying out transesterification between fatty oil and ethanol in the presence of dehydrated gypsum and rare earth Lewis base, (2) filtering to sep. water-containing gypsum crystal, and (3) vacuum-distilling to obtain ethanol for recycle use. The dehydrated gypsum can absorb water in the reaction mixture With the catalyst, the ester-exchange method has mild reaction condition, high reaction velocity, and high yield.

L14 ANSWER 9 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2007:1045266 CAPLUS
DOCUMENT NUMBER: 147:523844
TITLE: Preparation and properties of novel green poly(etherester urethane)s insulating coatings based on polyols derived from glycolyzed PET, castor oil, and adipic acid and blocked isocyanate
AUTHOR(S): Moeini, Hamid Reza
CORPORATE SOURCE: Polyurethane Department, Iran Polymer and Petrochemical Institute, Tehran, Iran
SOURCE: Journal of Applied Polymer Science (2007), 106(3), 1853-1859
CODEN: JAPNAB; ISSN: 0021-8995
PUBLISHER: John Wiley & Sons, Inc.
DOCUMENT TYPE: Journal
LANGUAGE: English

AB To utilize renewable resource raw materials as well as trying to recycle polymeric materials, three new polyols (PEE1-3) were prepared from transesterification reaction of post-consumer poly(ethylene terephthalate) (PET), different mol. wts. of poly(ethylene glycol) (PEG), and glycerin. The intermediate hydroxyl-terminated compds. were chain extended via esterification reaction with adipic acid (AA), and the products were reacted with castor oil (CO). These polyols were cured by blocked isocyanate (BIC) made from trimethylol propane, toluene diisocyanate, and N-Me aniline. All of starting materials and final films were characterized by conventional methods. Curing condition was optimized via gel content measurements. Crosslink d. of samples was

determined via equilibrium swelling method, using Flory-Rehner equations. Effects
of structural parameters on phys., elec., mech., and dynamic mech. (DMTA) properties of the polyurethane coatings were investigated. Comparison of results with com. available product shows that the prepared green coatings have environmental benefits as well as high performance for metal insulator coatings too.
OS.CITING REF COUNT: 2 THERE ARE 2 CAPLUS RECORDS THAT CITE THIS RECORD (2 CITINGS)
REFERENCE COUNT: 45 THERE ARE 45 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 10 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2007:167782 CAPLUS
DOCUMENT NUMBER: 146:403700
TITLE: Novel polyurethane electrical insulator coatings based on amide-ester-ether polyols derived from castor oil and re-cycled poly(ethylene terephthalate)
AUTHOR(S): Yeganeh, Hamid; Moeini, Hamid Reza
CORPORATE SOURCE: Polyurethane Department, Iran Polymer and Petrochemical Institute, Tehran, Iran
SOURCE: High Performance Polymers (2007), 19(1), 113-126 CODEN: HPPOEX; ISSN: 0954-0083
PUBLISHER: Sage Publications
DOCUMENT TYPE: Journal
LANGUAGE: English
AB In order to utilize renewable resource raw materials as well as trying to recycle polymeric materials, three new polyols (PEEA1-3) were prepared Bottle grade recycled poly(ethylene terephthalate) was subjected to transesterification and an amidation reaction with different mol. wts. of poly(ethylene glycol) and diethanol amine. The intermediate hydroxyl-terminated compds. were chain extended via an esterification reaction with adipic acid and the products were reacted with castor oil. Polyurethane networks were prepared through the reaction of PEEA1-3 with librated isocyanate groups of a blocked isocyanate curing agent made from trimethylolpropane, toluene diisocyanate and N-Me aniline. All of the starting materials and final cured films were characterized by conventional methods. The curing condition was optimized via gel content measurements. The crosslink d. of the samples was determined via an equilibrium
swelling method, using the Flory-Rehner equations. The effects of structural parameters on the phys., elec., mech., and dynamic mech. properties of the polyurethane coatings were evaluated. Investigation of the results showed that the prepared green coatings have environmental benefits as well as high performance as metal insulator coatings.
OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)
REFERENCE COUNT: 40 THERE ARE 40 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

=> d l14 11-22 ibib abs

L14 ANSWER 11 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2007:97675 CAPLUS
DOCUMENT NUMBER: 146:208350
TITLE: Method for continuously manufacturing biodiesel oil

using solid acid catalyst in piston flow reactor
INVENTOR(S): Yuan, Zhenhong; Lu, Pengmei; Wang, Zhongming; Sun, Xiaoying; Ma, Longlong; Wu, Chuangzhi; Li, Haibin
PATENT ASSIGNEE(S): Guangzhou Energy Research Institute, Chinese Academy of Sciences, Peop. Rep. China
SOURCE: Faming Zhuanli Shenqing Gongkai Shuomingshu, 9pp. CODEN: CNXXEV
DOCUMENT TYPE: Patent
LANGUAGE: Chinese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
CN 1900223	A	20070124	CN 2006-10036419	20060710
CN 100448946	C	20090107		
PRIORITY APPLN. INFO.:			CN 2006-10036419	20060710

AB The title method comprises: (1) mixing a raw material oil and methanol, adding into a fixed-bed reactor, and carrying out reaction with an acid catalyst at 50-62°C at a methanol/raw material weight ratio of (4-6):100 for 0.5-1 h, (2) pumping the pre-esterified material and a mixture of anhydrous methanol and alkaline catalyst into a mixed reactor, mixing, transferring into a pipe piston flow reactor, and carrying out transesterification reaction of triglyceride and methanol at a methanol/raw material molar ratio of (4:1)-(6:1) at 50-62°C for 20-40 min, and (3) separating glycerol, water, and methanol to obtain the final product. This method can recycle wastes, realize continuous manufacture of biodiesel oil, and combine advantages and avoid disadvantages of acid method and alkali method.

L14 ANSWER 12 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2006:362442 CAPLUS
DOCUMENT NUMBER: 144:394595
TITLE: Process for the preparation of fatty acid methyl ester from triglyceride oil by transesterification
INVENTOR(S): Ghosh, Pushpito Kumar; Adimurthy, Subbarayappa; Gandhi, Mahesh Ramnikbhai; Vaghela, Nilesh Kumar Kanjibhai; Rathod, Meena Rajnikant; Shethia, Bhupendra Dhanvantrai; Pandya, Jayant Batukrai; Parmar, Rajendra Amrutlal; Dodia, Prakash Jagjivanbhai; Patel, Mehul Ghanshyambhai; Parmar, Dahyabhai Revabhai; Patel, Sanat Natwarlal
PATENT ASSIGNEE(S): Council of Scientific and Industrial Research, India
SOURCE: U.S. Pat. Appl. Publ., 13 pp. CODEN: USXXCO
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
US 20060080891	A1	20060420	US 2004-22397	20041223
US 7666234	B2	20100223		
AU 2004324250	A1	20060427	AU 2004-324250	20041020
AU 2004324250	B2	20100318		
CA 2626129	A1	20060427	CA 2004-2626129	20041020

WO 2006043281 A1 20060427 WO 2004-IN329 20041020
W: AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW
RW: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG, BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW, AM, AZ, BY, KG, KZ, MD, RU, TJ, TM
IN 2004DE02056 A 20060908 IN 2004-DE2056 20041020
EP 1996680 A1 20081203 EP 2004-791870 20041020
R: AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LI, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR, AL, HR, LT, LV, MK
RU 2379332 C1 20100120 RU 2008-115448 20041020
MX 2008004064 A 20090928 MX 2008-4064 20080326
PRIORITY APPLN. INFO.: IN 2004-DE2056 A 20041020
WO 2004-IN329 A 20041020

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT

AB The present invention relates to an improved process for the preparation of biodiesel from triglyceride oils through transesterification, particularly the fatty acid Me ester of oil mech. expelled from whole seeds of Jatropha curcas, a plant with potential for cultivation on wastelands in India and other countries, all unit operations being carried out at ambient temperature

OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)

L14 ANSWER 13 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2004:609282 CAPLUS
DOCUMENT NUMBER: 141:125428
TITLE: Manufacture of high-concentration α-sulfofatty acid alkyl ester salt-containing compositions, high-concentration surfactant compositions, and granular detergent compositions containing same
INVENTOR(S): Nishimura, Isao; Horiuchi, Teruo; Yoshii, Toru; Oishi, Takeshi; Miyata, Naomi; Kobayashi, Manabu; Ochiai, Takashi
PATENT ASSIGNEE(S): Lion Corp., Japan
SOURCE: Jpn. Kokai Tokkyo Koho, 19 pp.
CODEN: JKXXAF
DOCUMENT TYPE: Patent
LANGUAGE: Japanese
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
JP 2004210807	A	20040729	JP 2002-378304	20021226
JP 4243953	B2	20090325		
JP 2008260950	A	20081030	JP 2008-163620	20080623

PRIORITY APPLN. INFO.: JP 2002-378304 A3 20021226

AB Compns. containing α-sulfofatty acid alkyl ester salt (α-SF salt) is condensed to water content ≤13% by simple condensation operation; the condensed compns. have hexagonal phase at 70° by polarization microscopic observation, thereby preventing precipitation of Na2SO4.

The high-concentration surfactant compns. for granular detergent compns. are manufactured from compns. containing α-SF salt 40-55, H2O 20-40, lower alcs. 6-14, and nonionic surfactants 7-24% by decreasing the water content to ≤13% by simple condensation operation. Thus, 46% sulfonated Pastell M 146 Na salt (a 20:80 blend of C14 and C16 saturated fatty acid Me ester prepared by transesterification of palm oil with MeOH, followed by fractionating) was mixed with of a nonionic surfactant (polyoxyalkylene base) 10.1, ethoxylated Diadol 13 (C13 alc.) 10.1, MeOH 9.2, and H2O 30.7% to give a composition with viscosity 0.22 Pa·s and showing liquid crystalline phase state at 50°, which was condensed by recycle flash evaporation method to give a composition with water content 10%, viscosity 3.2 Pa·s at 80°, showing hexagonal phase at 70°.

L14 ANSWER 14 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2003:630066 CAPLUS
TITLE: Enzymatic transesterification for biodiesel production with a novel route from renewable oils in a solvent-free medium
AUTHOR(S): Du, Wei; Xu, Yuanyuan; Liu, Dehua; Zeng, Jing
CORPORATE SOURCE: Department of Chemical Engineering, Tsinghua University, Beijing, 100084, Peop. Rep. China
SOURCE: Abstracts of Papers, 226th ACS National Meeting, New York, NY, United States, September 7-11, 2003 (2003), BIOL-201. American Chemical Society: Washington, D. C.
CODEN: 69EKY9
DOCUMENT TYPE: Conference; Meeting Abstract
LANGUAGE: English
AB A novel route for biodiesel production has been developed in this paper, in which Me acetate was adopted as a novel acyl acceptor and it has been demonstrated that this novel acyl acceptor showed no neg. effect on enzyme activity. And in this novel route, there is no glycerol produced in the process, so it is very convenient to recycle the lipase without any extra treatment and this new route seems to be very promising for enzymic transesterification for large-scale production of biodiesel. Novozyme435 (immobilized Candida antarctica lipase) was screened from several lipases, giving the highest Me ester (ME) yield of 92%. The optimum conditions of the transesterification were as follows: 30% enzyme based on oil weight; molar ratio of Me acetate / oil 12:1; temperature 40°C and reaction time 10 h. Since no glycerol was produced in the process, it is very convenient for recycling the catalyst and lipase remained high activity after being used repeatedly for a long period.

L14 ANSWER 15 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 2000:548822 CAPLUS
DOCUMENT NUMBER: 133:121967
TITLE: Process and apparatus for continuous transesterification of glyceridic oils
PATENT ASSIGNEE(S): Lackner, Johannes, Austria; Schmidbauer, Josef; Waldmann, Martin Franz
SOURCE: Austrian, 9 pp.
CODEN: AUXXAK
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1

PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
AT 405938	B	19991227	AT 1994-1284	19940629
AT 9401284	A	19990515		

PRIORITY APPLN. INFO.: AT 1994-1284 19940629

AB In a continuous (multistage) process for base-catalyzed transesterification of animal and/or vegetable oils with lower alcs., especially MeOH, at room temperature and atmospheric pressure, after each transesterification stage a portion of the (intermediate) product is withdrawn, mixed with addnl. catalyst-containing lower alc., then mixed with addnl. reactant oil and recycled. The recycling results in a more rapid establishment of equilibrium in each transesterification stage. An intensively stirred flow-through reactor suitable for the process, with side arms to accommodate the recycle stream(s), is described.

OS.CITING REF COUNT: 1 THERE ARE 1 CAPLUS RECORDS THAT CITE THIS RECORD (1 CITINGS)

L14 ANSWER 16 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1999:717860 CAPLUS
DOCUMENT NUMBER: 131:300772
TITLE: Method for the transesterificative preparation of fatty acid esters of fatty alcohols from triglycerides and fatty alcohols
INVENTOR(S): Westfechtel, Alfred; Grundt, Elke
PATENT ASSIGNEE(S): Henkel K.-G.a.A., Germany
SOURCE: Ger. Offen., 4 pp.
CODEN: GWXXBX
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19819655	A1	19991104	DE 1998-19819655	19980502
WO 9957091	A1	19991111	WO 1999-EP2730	19990423
RW: AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE				
EP 1075459	A1	20010214	EP 1999-920749	19990423
R: AT, BE, CH, DE, DK, ES, FR, GB, GR, IT, LI, LU, NL, SE, MC, PT, IE, FI				

PRIORITY APPLN. INFO.: DE 1998-19819655 A 19980502
WO 1999-EP2730 W 19990423

AB Fatty acid esters of fatty alcs. (e.g., oleyl oleate), having an acid value of <1 and a OH value of <15, which are useful as lubricants (no data) or as base oils (no data) for hydraulic fluids (no data) or turbine oils (no data), are prepared by the transesterification of C10-24 alcs. (e.g., oleyl alc.), or their corresponding ethoxylates or propoxylates, and catalysts (e.g., lithium hydroxide) with a triglyceride (e.g., sunflower oil) at 180-240°, followed by removal of the glycerin byproduct by vacuum distillation and recycle of the unreacted fatty alc.

L14 ANSWER 17 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1998:379233 CAPLUS
DOCUMENT NUMBER: 129:42562
ORIGINAL REFERENCE NO.: 129:8913a,8916a
TITLE: Transesterification process and coalescence remover for the production of lower alkyl esters of fatty acids from fats and/or oils
INVENTOR(S): Falkowski, Juergen; Blum, Stephan; Gutsche, Bernhard
PATENT ASSIGNEE(S): Henkel K.-G.a.A., Germany
SOURCE: Ger., 4 pp.
CODEN: GWXXAW
DOCUMENT TYPE: Patent
LANGUAGE: German
FAMILY ACC. NUM. COUNT: 1
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
DE 19721474	C1	19980604	DE 1997-19721474	19970523
PRIORITY APPLN. INFO.:			DE 1997-19721474	19970523

AB Lower alkyl esters (e.g., ethyl) of fatty acids are prepared by the batch-wise transesterification of fats and/or glyceridic oils (e.g., rapeseed oil) with lower alkanols (e.g., ethanol) and a catalyst (e.g., NaOMe) in a reactor with the recycle being fed through a coalescence remover (e.g., a wire, metal, glass-fiber, and/or plastic web which facilitates coalescence) with subsequent glycerol removal.
REFERENCE COUNT: 3 THERE ARE 3 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 18 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1995:577762 CAPLUS
DOCUMENT NUMBER: 122:313333
ORIGINAL REFERENCE NO.: 122:56981a,56984a
TITLE: A note on transesterifications of vegetable oils catalyzed by lipase in a packed tubular reactor
AUTHOR(S): Mukesh, D.; Banerji, A. A.; Bevinakatti, H. S.
CORPORATE SOURCE: Alchemie Res. Cent., Thane, 400 601, India
SOURCE: Indian Chemical Engineer, Section A: Journal of Indian Institute of Chemical Engineers (1994), 36(4), 193-6
CODEN: IENAEH
PUBLISHER: Indian Institute of Chemical Engineers
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Lipase-catalyzed transesterification of castor and coconut oils by n-butanol in a packed tubular recycle reactor is described. An increasing amount of n-butanol inhibits the rate of reaction. Transesterification of castor oil generates the glycerol di- and mono ricinoleates and butylricinoleate. An increasing recycle rate increases the rate of reaction up to a value of 160 mL/h, beyond which the rate remains constant Mass transfer and reaction controlled regimes are identified by calculating the mass transfer coefficient and Damkohler number
OS.CITING REF COUNT: 5 THERE ARE 5 CAPLUS RECORDS THAT CITE THIS RECORD (5 CITINGS)

L14 ANSWER 19 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1994:215763 CAPLUS
DOCUMENT NUMBER: 120:215763
ORIGINAL REFERENCE NO.: 120:38269a,38272a
TITLE: Enzymic method for preparing transesterified oils.
INVENTOR(S): Brown, Peter H.; Carvallo, Federico D.; Dinwoodie, Robert C.; Dueber, Michael T.; Hayashi, David K.; Krishnamurthy, R. G.; Merchant, Zohar M.; Myrick, James J.; Silver, Richard S.; Thomas, Chrisanthus
PATENT ASSIGNEE(S): Kraft General Foods, Inc., USA
SOURCE: U.S., 62 pp. Cont.-in-part of U.S. Ser. No. 714,432, abandoned.
CODEN: USXXAM
DOCUMENT TYPE: Patent
LANGUAGE: English
FAMILY ACC. NUM. COUNT: 3
PATENT INFORMATION:

PATENT NO.	KIND	DATE	APPLICATION NO.		DATE
US 5288619	A	19940222	US 1992-897255		19920611
AU 9169794	A	19910718	AU 1991-69794		19901213
PRIORITY APPLN. INFO.:			US 1989-455551	B2	19891218
			US 1989-455555	B1	19891218
			US 1991-700115	B2	19910509
			US 1991-714432	B2	19910613
			WO 1990-US7410	A	19901213

ASSIGNMENT HISTORY FOR US PATENT AVAILABLE IN LSUS DISPLAY FORMAT
AB An enzymic transesterification method for preparing a margarine oil having both low trans-acid and low intermediate-chain fatty acid content, is disclosed. The transesterification is carried out with a stearic acid source material and a vegetable oil, using a 1-,3-positionally specific lipase, and hydrogenating the fatty acid mixture to provide a recycle stearic acid source material. Also described is a counter-current method for preparing a transesterified oil. The method includes the steps of providing a transesterification reaction zone containing a 1-, 3-positionally specific lipase, introducing a vegetable oil into the transesterification zone, introducing a stearic acid source material, conducting a supercrit. gas or subcrit. liquefied gas counter-current fluid, carrying out the transesterification reaction of the triglyceride stream with the stearic acid or stearic acid mono ester stream in the reaction zone, withdrawing the transesterified triglyceride margarine oil stream, withdrawing the counter-current fluid phase, and hydrogenating the transesterified stearic acid or stearic acid mono ester to provide a hydrogenated stearic acid source material, which is recycled into the reaction zone.
OS.CITING REF COUNT: 25 THERE ARE 25 CAPLUS RECORDS THAT CITE THIS RECORD (25 CITINGS)
REFERENCE COUNT: 100 THERE ARE 100 CITED REFERENCES AVAILABLE FOR THIS RECORD. ALL CITATIONS AVAILABLE IN THE RE FORMAT

L14 ANSWER 20 OF 22 CAPLUS COPYRIGHT 2010 ACS on STN
ACCESSION NUMBER: 1993:167896 CAPLUS
DOCUMENT NUMBER: 118:167896
ORIGINAL REFERENCE NO.: 118:28773a,28776a

TITLE: Lipase catalyzed transesterification of vegetable oils - a comparative study in batch and tubular reactors
AUTHOR(S): Mukesh, D.; Banerji, A. A.; Newadkar, R.; Bevinakatti, H. S.
CORPORATE SOURCE: Alchem. Res. Cent., Thane, 400601, India
SOURCE: Biotechnology Letters (1993), 15(1), 77-82
CODEN: BILED3; ISSN: 0141-5492
DOCUMENT TYPE: Journal
LANGUAGE: English
AB Lipozyme catalyzed transesterification of castor and coconut oils are studied in batch and tubular recycle reactors and the advantages of the latter over the former reactor for this reaction are described.
OS.CITING REF COUNT: 10 THERE ARE 10 CAPLUS RECORDS THAT CITE THIS RECORD (10 CITINGS)

L14 ANSWER 21 OF 22 AGRICOLA Compiled and distributed by the National Agricultural Library of the Department of Agriculture of the United States of America. It contains copyrighted materials. All rights reserved. (2010) on STN
ACCESSION NUMBER: 2010:37156 AGRICOLA
DOCUMENT NUMBER: IND44329285
TITLE: The transesterification of rapeseed and waste sunflower oils: Mass-transfer and kinetics in a laboratory batch reactor and in an industrial-scale reactor/separator setup.
AUTHOR(S): Klofutar, B.; Golob, J.; Likozar, B.; Klofutar, C.; Zagar, E.; Poljans ek, I.
AVAILABILITY: DNAL (TD930.A32)
SOURCE: Bioresource technology, 2010 May Vol. 101, no. 10 p. 3333-3344
Publisher: [New York, NY]: Elsevier Ltd.
ISSN: 0960-8524
NOTE: Includes references
DOCUMENT TYPE: Article; (ELECTRONIC RESOURCE)
FILE SEGMENT: Other US
LANGUAGE: English
AB We have investigated the transesterification of rapeseed (RO) and waste sunflower (SO) oils with methanol in the presence of potassium hydroxide as a catalyst. The transesterification of tri-acylglycerols was first conducted in a batch reactor. The effect of the temperature on the reaction rates was studied at a constant molar ratio of the alcohol to tri-acylglycerols (6:1) and for a constant concentration of the catalyst (1.0wt%). Size-exclusion chromatography and (British pound)H NMR spectroscopy were used to quantitatively monitor the transesterification reaction. The mass-transfer coefficients of the tri-acylglycerols during the initial transesterification stage were found to be 0.2-1.2x10 ae mmin (British pound), depending on the type of oil and the temperature. Calculated activation energies implied that at higher temperatures the formation of mono-acylglycerols and glycerole was favored for the SO (93kJ/mol for the forward and 48kJ/mol for the backward reaction) and the RO (47kJ/mol for the forward and 36kJ/mol for the backward reaction), respectively. For the continuous industrial reactor/separator setup, the optimum methanol recycle ratio was established as 0.0550.

L14 ANSWER 22 OF 22 AGRICOLA Compiled and distributed by the National

ACCESSION NUMBER: 93:36182 AGRICOLA
DOCUMENT NUMBER: IND93019587
TITLE: Lipase catalysed transesterification of vegetable oils--a comparative study in batch and tubular reactors.
AUTHOR(S): Mukesh, D.; Banerji, A.A.; Newadkar, R.; Bevinakatti, H.S.
CORPORATE SOURCE: Alchemie Research Centre, Maharashtra, India
AVAILABILITY: DNAL (QR53.B56)
SOURCE: Biotechnology letters, Jan 1993. Vol. 15, No. 1. p. 77-82
Publisher: Middlesex : Science and Technology Letters.
CODEN: BILED3; ISSN: 0141-5492
NOTE: Includes references.
DOCUMENT TYPE: Article
FILE SEGMENT: Non-U.S. Imprint other than FAO
LANGUAGE: English

AB Lipozyme catalysed transesterification of castor and coconut oils are studied in batch and tubular recycle reactors and the advantages of latter over the former reactor for this reaction are described.

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(FILE 'HOME' ENTERED AT 18:12:10 ON 17 AUG 2010)

FILE 'CAPLUS, AGRICOLA' ENTERED AT 18:12:26 ON 17 AUG 2010
L1 11 S RECYCLE (S) (FATTY (A) ACID (A) METHYL (A) ESTER)
L2 5 S L1 (L) (TRANSESTERIFICATION OR ESTERIFICATION)
L3 0 S RECYCLE (7W) (FATTY (A) ACID (A) AKLYS (A) ESTER)
L4 1 S RECYCLE (10W) (FATTY (A) ACID (A) ALKYL (A) ESTER)
L5 0 S RETURN (S) (FATTY (A) ACID (A) ALKYL (A) ESTER)
L6 18 S RECYCLE (L) (FATTY (W) ACID (W) METHYL (W) ESTER#)
L7 4 S L6 AND ESTERIFICATION
L8 26 S ESTERIFICATION (L) (FAT OR OIL) (L) RECYCLE
L9 2 S L8 AND (RECYCLE (S) ESTER)
L10 29 S TRANSESTERIFICATION (L) (FAT OR OIL) (L) RECYCLE
L11 21 S L10 NOT L8
L12 1 S L0 AND RECYCLE (S) PRODUCT
L13 7 S L10 AND (RECYCLE (S) PRODUCT)
L14 22 S L10 NOT L13

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ALL L# QUERIES AND ANSWER SETS ARE DELETED AT LOGOFF
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STN INTERNATIONAL LOGOFF AT 18:34:01 ON 17 AUG 2010